VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a minor, municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards 9 VAC 25-260-10 et.seq. The discharge is a result of the operation of a municipal wastewater treatment plant treating sewage originating from a marina and restaurant, and possible residential sources. This permit action includes revised effluent limitations and special conditions in the permit.

1. Facility Name and Location Address: Regatta Point Yacht Club Sewage Treatment Plant (STP)
137 Neptune Lane
Deltaville, VA 23043

Mailing Address: P.O. Box 1188
Deltaville, VA 23043

Facility Owner: John C. Dozier
Title: Owner
Mailing Address: Same as facility
Telephone: (804) 776-8400
Email: jcd990@gmail.com

2. SIC Code(s): 4952 - Sewerage Systems
7997 - Membership Sports and Recreation Clubs
4493 - Marinas

3. Permit No. VA0090921 Permit Expiration Date: July 30, 2012

4. Application Complete Date: Date: April 23, 2012
Permit Drafted By: Jeremy Kazio Date: March 21, 2012

DEQ Regional Office: Piedmont Regional Office

Reviewed By: Andrew Hammond Date: March 23, 2012
Curt Linderman Date: May 15, 2012; May 18, 2012

5. Receiving Stream:

Name:	Broad Creek
River Mile:	3-BRD000.37
Basin:	Rappahannock River
Subbasin:	N/A
Section:	1
Class:	II
Special Standards:	a

Tidal? YES – Statistical low flows not applicable to tidal receiving waters

Tidal dilution ratios used:

Acute Toxicity:	2:1	(mixing zone = 1 part receiving water, 1 part effluent)
Chronic Toxicity:	50:1	(mixing zone = 49 parts receiving water, 1 part effluent)
Human Health:	50:1	(mixing zone = 49 parts receiving water, 1 part effluent)

On 303(d) list? YES

See **Attachment A** for 2/23/2012 Flow Frequency Memorandum by J.Palmore, P.G.

6. Operator License Requirements: Class IV

The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collections and Treatment Regulations (SCAT) 9 VAC 25-790-300.

7. Reliability Class: Class I
Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class I Reliability for this facility.

8. Permit Characterization:

	Issuance		Existing Discharge
X	Reissuance	X	Proposed Discharge
	Revoke & Reissue	X	Effluent Limited
	Owner Modification	X	Water Quality Limited
	Board Modification		WET Limit
	Change of Ownership/Name		Interim Limits in Permit
	Effective Date:		Interim Limits in Other Document (attached)
X	Municipal		Compliance Schedule Required
	SIC Code(s): 4952,7997,4493		Site Specific WQ Criteria
	Industrial		Variance to WQ Standards
	SIC Code(s):		Water Effects Ratio
	POTW	X	Discharge to 303(d) Listed Segment
X	PVOTW		Toxics Management Program Required
X	Private		Toxics Reduction Evaluation
	Federal		Possible Interstate Effect
	State		Storm Water Management Plan

9. Wastewater Flow and Treatment:

Table 1: Wastewater Flow and Treatment

Outfall Number	Wastewater Source	Treatment	Design Flow
001	Showers and restrooms for marina patrons and employees, restaurant, and possible condominium units	flow equalization, aeration, clarification, chlorination, dechlorination, sludge wasting and holding chamber	30,000 gpd (0.030 MGD)

Please see **Attachment B** for facility flow diagram.

10 Sludge Disposal: Waste sludge will be held in a holding tank and disposed of by a licensed contract hauler as needed. Documentation of sludge use and disposal activities will be submitted and approved in accordance with Part I.C.5 at least 120 days following the issuance of a Certificate to Operate for the facility.

11. Discharge Location Description: This facility discharges to Broad Creek in Deltaville, VA.

Name of USGS topo map: Deltaville– 122D (See **Attachment C**)

12. Material Storage: Chemicals used for the wastewater treatment plant are required to be handled in such a manner so as not to permit a discharge of those chemicals in accordance with Part I.C.8 of the 2012 permit.

13. Ambient Water Quality Information:
Ambient water quality information was derived from data obtained from monitoring station 3-BRD000.31. Monitoring station 3-BRD000.31 is on Broad Creek at the end of Route 636, which is across the stream from Regatta Point Yacht Club. Please see Item 16 of this fact sheet for further information regarding how the data were used for 2012 permit development.

14. Antidegradation Review and Comments:
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Broad Creek has historically been considered a Tier 2 water because previous modeling determined that “the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable (sic) effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to a least an aggregate flow of 1.0 MGD” (Phillips, 1992). However, the Rappahannock Mesohaline estuary is impaired due to dissolved oxygen violations. Review of local monitoring data from station 3-BRD000.31 shows that on two occasions dissolved oxygen values were at or only slightly above 5.0 mg/L. Due to this the stream should be considered Tier 1. (See **Attachment A** for Flow Frequency Analysis by J.Palmore dated February 23, 2012).

15. Site Inspection: By __Heather Horne____on _May 1, 2008____. (See **Attachment D**)
Please note that the above document is not an actual inspection but instead a memo to the file by DEQ-PRO Compliance Inspection Staff stating that the facility has not yet been constructed.

16. Effluent Limitation Development:

Table 2 –Basis for 2012 Permit Limitations

PARAMETER	BASIS FOR EFFLUENT LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD)	NA	NL		NA		NA	NL	1/Day	Estimate
pH	1,3	NA		NA		6.0 SU	9.0 SU	1/Day	Grab
BOD_5	2, 3	30 mg/L	3400 g/d	45 mg/L	5100 g/d	NA	NA	1/Month	Grab
Total Suspended Solids (TSS)	2, 3	30 mg/L	3400 g/d	45 mg/L	5100 g/d	NA	NA	1/Month	Grab
Ammonia as N	1	15.3 mg/L		15.3 mg/L		NA	NA	1/Month	Grab
Total Residual Chlorine (TRC)	1	13 µg/L		16 µg/L		NA	NA	1/Day	Grab
Dissolved Oxygen (DO)	2	NA		NA		5.0 mg/L	NA	1/Day	Grab
Fecal Coliform	1	200 N / 100 mL (Geometric Mean)		NA		NA	NL	4/Month (betw een 10am and 4pm)	Grab
Enterococci	1	35 N / 100 mL (Geometric Mean)		NA		NA	NL	4/Month (betw een 10am and 4pm)	Grab

1. Water Quality Standards (9 VAC 25-260)
2. Best Engineering Judgment (BEJ)
3. Federal Effluent Guidelines (40 CFR 133.102)

Water Quality Standards**:**

pH: A pH limitation of 6.0 to 9.0 standard units is assigned to all discharges into Class II Estuarine Waters in accordance with the Water Quality Standards (WQS), 9 VAC 25-260-50, and federal secondary treatment standard guidelines.

Total Residual Chlorine (TRC) and Ammonia as N: If it is feasible that a specific pollutant for which in-stream criteria are given in the *Virginia Water Quality Standards* (9 VAC 25-260 et.seq.) may exist in the facility's effluent, a Reasonable Potential Analysis must be conducted in order to determine if it is statistically probable that the permittee's future discharge may contain that pollutant in concentrations which are harmful to aquatic life and/or human health within the receiving stream. The first step of the analysis is to calculate the pollutant's acute and chronic wasteload allocations (WLA's), which are defined as the pollutant concentration that may be discharged by the facility over specific periods of time which will maintain the in-stream criteria referenced above. The WLA's are determined using a DEQ-sourced Excel spreadsheet called MSTRANTI, which requires inputs

representing site specific data for critical flows, dilution, mixing, and water quality for both the receiving stream and the effluent. After the WLA's are calculated, a desktop computer application called STATS is utilized to determine if future pollutant concentrations may exceed the WLA's. The STATS application fits the WLA's, as well as observed effluent data, to respective lognormal distributions. If the projected effluent distribution exceeds either of the projected WLA distributions, then a limitation is deemed necessary. The limitation is equal to the concentration expected to be observed at the proposed limitation monitoring frequency within the most protective projected WLA distribution.

The inputs required by MSTRANTI for critical ambient water quality for this facility were calculated using data from monitoring station 3-BRD000.31 (see **Attachment E**). Since this facility has not been constructed, the effluent inputs for MSTRANTI were either based on conservative assumptions, or were derived from DMR data reported by Bay Marine Ltd. STP (VA0087173) between 2009-2012 (see **Attachment E**). Bay Marine Ltd. STP is a permitted facility with effluent quality and geographic location similar to those proposed for this facility. Please see Table 3 below for specific inputs.

Table 3: MSTRANTI Source Data

			Temp. (°C)	pH (SU)	Salinity (g/kg)	Hardness (mg/L as $CaCO_3$)
Ambient Inputs (Attachment E)	3-BRD000.31: (May 2007 – November 2010)	90th Percentile	28.4	8.1		N/A for Saltwater Discharges
		10th Percentile	5.7	7.4		
		Average			15.8	
Effluent Inputs (Attachment E)	Conservative Assumption	90th Percentile	28*			
	DMR from Bay Marine Ltd. STP	90th Percentile		7.34		
		10th Percentile		7.07		
Tidal Dilution Ratios (Attachment A)	Tidal 'defaults' used in accordance with GM00-2011 (Pg. 30), as recommended in 2/23/2012 Flow Frequency Analysis by J.Palmore, P.G.					

* - Please note that the 90th percentile effluent temperature used for the 2012 analysis is a conservative assumption, which differs from that of the 2007 permit which used effluent data from Bay Marine Ltd. STP facility. This difference is due to the fact that the Bay Marine Ltd. STP is entirely enclosed in a building, and therefore variations in effluent temperature may not be representative of a discharge from an outdoor treatment works.

For Ammonia and Total Residual Chlorine, GM 00-2011 requires that values of 9.0 mg/L and 20 mg/L, respectively, be entered into STATS as effluent data in order to bypass the program's Reasonable Potential Analysis because these pollutants are either purposely introduced or known to exist in this facility's effluent.

The Ammonia and TRC limitation evaluations indicated that less stringent limitations are needed to maintain Water Quality Standards in the receiving stream. The reduced limitations are due to the fact that Broad Creek has been reclassified from a Tier 2 water body to a Tier 1 water body. Please see section 18 of this fact sheet for further information regarding applicable antibacksliding policies.

Please note that the wasteload allocations entered into STATS for the TRC limitation evaluation are for Chlorine Produced Oxidants (CPO). Chlorinated effluents discharged to salt water react to produce chlorine produced oxidants that have a toxic impact similar to TRC in freshwater. It is assumed that CPO in salt water receiving streams is controlled by the effluent TRC limit and are therefore interchangeable.

Please see **Attachment F** for the 2012 and 2007 MSTRANTI and STATS printouts.

Fecal Coliform: For sewage discharges that may reach shellfish waters, permits limit fecal coliform with an effluent limit of 200 colony forming units per 100 milliliters, applied as a monthly geometric

mean. Although the Water Quality Standards have been amended to remove the reference to this effluent limit in shellfish waters, the Virginia Department of Health, Bureau of Shellfish Sanitation still uses fecal coliform as an indicator for determining the quality of shellfish waters, and it is necessary to ensure discharges meet this level. Since it has historically maintained the in-stream water quality criteria for fecal coliform of 14/43 per 100 milliliters, the 200 per 100 milliliters effluent limit will be used in shellfish waters in order to continue meeting the in-stream criteria and for protection of shellfish under the general standard.

Enterococci: The limitation for Enterococci is expected to protect the primary contact recreation use bacteria criteria outlined in 9 VAC 25-260-170 (Water Quality Standards). The primary contact recreation bacterial in-stream criteria for protection of saltwater is 35N/100 mL colony forming units (CFU) of Enterococci bacteria is based on a monthly geometric mean resulting from at least 4 weekly samples.

Best Engineering Judgment:

DO: The DO limitation of a minimum 5.0 mg/L is based on Best Engineering Judgment. A monthly average limitation of 5.0 mg/L, and an instantaneous minimum limitation of 4.3 mg/L, were recommended in the Stream Sanitation Analysis Memorandum by Jennifer V. Palmore dated May 8, 2007 in order to address low DO concentrations observed in the Rappahannock River mesohaline estuary. Permitting staff applied the recommended monthly average limitation as the minimum limitation in the 2007 permit for conservative purposes and to simplify the permit to include only one limitation for DO. For linearity, it is staff's Best Engineering Judgment that this scenario be applied to the 2012 permit to maintain consistency with both the 2007 permit and with the 2007 Stream Sanitation Analysis.

BOD_5 and TSS: The BOD_5 and TSS limitations are based on secondary treatment standards (Federal Effluent Guidelines, §40 CFR 133.102) as recommended in both the Broad Creek Model and the Stream Sanitation Analysis documents mentioned above. The 1992 model indicates that discharges of conventional pollutants to Broad Creek below an aggregated flow of 1.0 MGD will have no calculable effect on dissolved oxygen concentrations due to rapid tidal flushing.

As of the drafting of this permit's 2012 reissuance, there are four permitted facilities authorized to discharge into Broad Creek. Their names and design flows are listed below. The aggregated design flows of these facilities is 65,500 gallons per day. Consequently, water quality based conventional limitations are not required for this facility.

VA0090921: Regatta Point Yacht Club STP	30,000 gpd
VA0087629: Dozier's Marine Center	8,500 gpd
VA0087173: Bay Marine Ltd. STP	7,000 gpd
VA0087611: Norview Marina	20,000 gpd
	65,500 gpd

Please note that the 2007 $cBOD_5$ limitation has been replaced by the corresponding BOD_5 limitation contained in the abovementioned Federal Effluent Guidelines (FEG). This is due to the reclassification of Broad Creek from a Tier 2 to a Tier 1 water body, and no longer being able to assume that $cBOD_5$ limitation combined with the Ammonia limitation is protective the FEG-based BOD_5 limitation of 30 mg/L.

The conglomeration of potentially oxygen-demanding pollutants in discharge effluent is referred to as Biochemical Oxygen Demand (BOD), and may be represented by two separate components, Carbonaceous Biochemical Oxygen Demand (cBOD) and Nitrogenous Biochemical Oxygen Demand (nBOD). Since cBOD represents only a portion of BOD, if it is limited in a permit, then nBOD must also be limited in order to control overall oxygen demanding substances within the receiving stream. Agency guidance (GM00-2011) suggests that a Total Kjeldahl Nitrogen (TKN) concentration under 3.0 mg/L represents an nBOD concentration of 'zero', with only refractory nitrogen being left (i.e.

organic nitrogen that is not usable by plant-based organisms). It is also a widely accepted that Ammonia comprises approximately 40%-60% of TKN. For the 2007 permit's Ammonia limitation evaluation, Broad Creek's Tier 2 designation contributed to an Ammonia limitation of 0.82 mg/L, which represents a TKN concentration ranging from 1.4 mg/L to 2.1 mg/L. This is well below the TKN concentration of 3.0 mg/L, and represents an anticipated nBOD concentration of 'zero'. However, with the reclassification of Broad Creek to Tier 1, the 2012 Ammonia limitation becomes 15.3 mg/L, which is less stringent and represents a TKN concentration range of approximately 25 mg/L to 38 mg/L. This TKN range translates to an nBOD concentration range of approximately 22 mg/L to 35 mg/L. In a worst case scenario, with a $cBOD_5$ limit of 25 mg/L combined with an Ammonia limit of 15.3 mg/L, the permittee has the potential to discharge BOD concentrations as high as 60 mg/L while continuing to maintain compliance with the permit. A BOD_5 concentration of 60 mg/L is not protective of the FEG's suggested BOD_5 limitation of 30 mg/L, and therefore, the 2007 $cBOD_5$ limitation has been replaced with the appropriate BOD_5 limitation.

Please see **Attachment G** for Stream Sanitation Analysis by Jennifer V. Palmore dated May 8, 2007, Broad Creek Model by M.D. Philips dated September 22, 1992, and Federal Effluent Guidelines, §40 CFR 133.102

17. Basis for Sludge Use & Disposal Requirements: Not applicable, as this facility will not land apply sludge.

18. Antibacksliding: All limitations in the 2012 permit reissuance are the same as or more stringent than the limitations in the 2007 permit reissuance with the exception of Ammonia as N and TRC. A limitation evaluation was conducted as described in Item 16 of this fact sheet which resulted in the determination that less stringent limitations for these pollutants are necessary to maintain the Water Quality Criteria. These limitations may be relaxed without considering it to be backsliding because, in accordance with 9VAC25-31-220.L.2.b: 1) new information is available (i.e. ambient water quality data) that was not available at the time of the 2007 permit reissuance, and 2) the permittee has not designed or constructed the treatment works, and therefore has not complied with the 2007 Ammonia or TRC limits. Therefore, the limitations for the 2012 permit have been adjusted to the level required to maintain the Water Quality Standards.

The 2007 permit contained a limitation for $cBOD_5$ of 25 mg/L. Due to the reasons explained in Item 16 of this fact sheet, the $cBOD_5$ limit has been replaced by a BOD_5 limitation of 30 mg/L for the 2012 permit. Both of the $cBOD_5$ and BOD_5 limitations are considered to be equivalent when applied as secondary treatment standards by the Federal Effluent Guidelines (§40 CFR 133.102), and therefore antibacksliding policies are not applicable.

19. Special Conditions:

Part I.B. - Additional Chlorine Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Water Quality Standards 9VAC25-260-170, Bacteria; Other Recreational Waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

Part I.C

a. Special Condition C.1 – 95% Capacity Reopener
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 4 for all POTW and PVOTW permits.

b. Special Condition C.2 – Operations and Maintenance Manual Requirement
Rationale: Required by Code of Virginia, §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

c. Special Condition C.3 – Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18 VAC 160-20-10 et seq.), require licensure of operators.

d. Special Condition C.4 – Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

e. Special Condition C.5 – Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B 2, and 420 through 720; and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

f. Special Condition C.6 – Sludge Reopener
Rationale: Required by VPDES Permit Regulation 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

g. Special Condition C.7 – Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limitation or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. The minimum quantification levels specified in this special condition are equal to those recommend in GM10-2003 (MN-3, Pg. 14) except for the BOD_5 QL, which is consistent with recently adopted VPDES General Permit regulations.

h. Special Condition C.8 – Materials Handling/Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

i. Special Condition C.9 - Total Maximum Daily Load (TMDL) / Nutrient Reopener
Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed it they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

j. Special Condition C.10—Indirect Dischargers
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1 & B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

k. Special Condition C.11 – CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790-50. 9 VAC 25-40-70.A authorizes DEQ to include technology-based

annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

l. Special Condition C.12 –Financial Assurance and Disclosure to Purchasers
Rationale: Required by Code of Virginia § 62.1.-44.18:3 and the Board's Financial Assurance Regulation, 9 VAC 25-650-10 et seq. Please note that the special condition language does not match current agency boilerplate, and is tailored to accommodate the permittee's uncertainty that the proposed treatment works may or may not serve residences. This language was approved by DEQ's Office of Financial Assurance on March 15, 2012 via email.

m. Special Condition C.13 - Treatment Works Closure Plan
Rationale: §62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

n. Special Condition C.14 – Nutrient Offset Requirements
Rationale: §62.1-44.19:15 of the State Water Control Law requires any owner of a domestic sewage treatment plant with a design flow of between 1,000 and 39,999 gallons per day that did not commence discharge as of January 1, 2011 to demonstrate to the Department that he has acquired wasteload allocations or compliance credits sufficient to offset his delivered total nitrogen and total phosphorus loads prior to the commencement of discharge.

20. Part II, Conditions Applicable to All VPDES Permits
The VPDES Permit Regulation at 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to 2007 Permit: The tables below represent a summary of the limitations and monitoring requirements changes to the 2007 permit.

(continued on next page . . .)

Table 4: Changes to Limitations and Monitoring (Part I.A.)

PARAMETER	DISCHARGE LIMITATIONS								MONITORING REQUIREMENTS				Reason for Change
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM		MAXIMUM		FREQUENCY		SAMPLE TYPE		
	From	To	From	To	From	To	From	To	From	To	From	To	
Flow (MGD)	NL	No Change	NA	No Change	NA	No Change	NL	No Change	1/Day	No Change	Estimate	No Change	No Changes
pH	NA	No Change	NA	No Change	6.0 SU	No Change	9.0 SU	No Change	1/Day	No Change	Grab	No Change	
$cBOD_5$ / BOD_5	25 mg/L ($cBOD_5$)	30 mg/L (BOD_5)	38 mg/L ($cBOD_5$)	45 mg/L (BOD_5)	NA	No Change	NA	No Change	1/Month	No Change	Grab	No Change	Limitation changed from $cBOD_5$ to BOD_5. See Item 16 of this fact sheet for further information regarding why limitation was changed. Loading limitations revised to reflect BOD_5 limitation and to be expressed as whole numbers in accordance with GM06-2016.
	2.8 kg/d	3400 g/d	4.3 kg/d	5100 g/d									
Total Suspended Solids (TSS)	30 mg/L	No Change	45 mg/L	No Change	NA	No Change	NA	No Change	1/Month	No Change	Grab	No Change	
	3.4 kg/d	3400 g/d	5.1 kg/d	5100 g/d									
Ammonia as N	0.82 mg/L	15.3 mg/L	0.82 mg/L	15.3 mg/L	NA	No Change	NA	No Change	1/Month	No Change	Grab	No Change	Please see Item 16 of this fact sheet for Water Quality Based Effluent Limitation Analysis. These new limitations reflect the concentrations necessary to maintain compliance with the Water Quality Standards. The TRC limitation is expressed in µg/L rather than mg/L for clarity purposes.
Total Residual Chlorine (TRC)	0.0030 mg/L	13 µg/L	0.0038 mg/L	16 µg/L	NA	No Change	NA	No Change	1/Day	No Change	Grab	No Change	
Dissolved Oxygen (DO)	NA	No Change	NA	No Change	5.0 mg/L	No Change	NA	No Change	1/Day	No Change	Grab	No Change	No Changes
Fecal Coliform	200 N/100 mL (Geometric Mean)	No Change	NA	No Change	NA	No Change	NL	No Change	1/Month (between 10am and 4pm)	4/Month (between 10am and 4pm)	Sterile Grab	Grab	Monitoring frequencies revised to reflect those required in GM10-2003.
Enterococci	35 N/100 mL (Geometric Mean)	No Change	NA	No Change	NA	No Change	NL	No Change	2/Month (between 10am and 4pm)	4/Month (between 10am and 4pm)	Sterile Grab	Grab	

Table 5: Other Changes to 2007 Permit

	From	To	Permit Section Changed	Reason for Change	Date
Changes to Part I.A	Part I.A.1	Part I.A.1	Authorization statement	Language enhanced for acuity purposes.	
	Part I.A.1(a)	Part I.A.1(a)	Design flow footnote	No Change	03/12
	Part I.A.1(b)	Part I.A.1(b)	Significant figures footnote	"Digits" changed to "figures" to match GM06-2012.	
	--	Part I.A.1(c)	Bacterial monitoring criteria footnote	New, regional addition in order to define bacterial monitoring frequency required in GM10-2003.	
	Part I.A.2	Part I.A.2	No discharge floating solids/foam	No Change	
	Part I.A.3	Part I.A.3	Sample location	No Change	
	Part I.A.4	Part I.A.4	Part I.B reference	Language revised to include reference to bacterial requirements.	
	Part I.A.5	Part I.A.5	85% removal BOD_5 & TSS	$cBOD_5$ changed to BOD_5 to match 2012 permit limitation. Wording arrangement revised for clarity	
Special Conditions Added or Modified	Part I.B	Part I.B	Additional TRC Limitations and Monitoring Requirements	Wording and monitoring frequency description revised for acuity purposes. Fecal coliform monitoring added if disinfection other than chlorination is used.	
	Part I.C.1	Part I.C.1	95% Capacity Reopener	No Change	
	Part I.C.2	Part I.C.2	O & M Manual	Revised to reflect boilerplate language released by OWP&CA on 4/3/2012	
	Part I.C.3	Part I.C.3	Licensed Operator	DPOR regulation name changed to match current regulation. Language also revised to reflect CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	
	Part I.C.4	Part I.C.4	Reliability Class	No Change	
	Part I.C.5	Part I.C.5	Sludge Use and Disposal	Revised to reflect current agency guidance (GM10-2003). Language further revised to reflect CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	
	Part I.C.6	Part I.C.6	Sludge Reopener	No Change	
	Part I.C.7	Part I.C.7	Compliance Reporting	Revised to reflect current agency guidance (GM10-2003). Language further revised according to regional procedure and for clarity purposes. BOD_5 QL revised from 5 mg/L to 2 mg/L for consistency with recently adopted VPDES General Permit regulations.	
	Part I.C.8	Part I.C.8	Materials Handling/Storage	Revised to reflect agency boilerplate contained in GM10-2003.	
	Part I.C.9 / Part I.C.12	Part I.C.9	TMDL / Nutrient Reopener	Language revised to reflect current agency guidance (GM07-2008 Amnd.2). Revised language addresses both nutrient reopener and TMDL reopener.	
	Part I.C.10	Part I.C.10	Indirect Dischargers	No Change	
	Part I.C.11	Part I.C.11	CTC, CTO Requirement	Revised wording to reflect current agency guidance (GM10-2003) and current nutrient guidance (GM07-2008, Amnd.2)	
	Part I.C.14	Part I.C.12	Financial Assurance	Language revised to reflect CTO issuance as the trigger for the special condition due to the facility's non-discharging status.	

	From	To	Permit Section Changed	Reason for Change	Date
	--	Part I.C.13	Treatment Works Closure Plan	New, reflects SCAT regulations requirements (9 VAC 25-790-120 E.). Added in case the permittee decides to construct the facility without residential development.	
	--	Part I.C.14	Nutrient Offset Requirements	Added due to §62.1-44.19:15.A.5 (see Item 19 of this fact sheet). This facility has not yet been built and therefore must demonstrate that all proposed nutrient loadings have been offset prior to commencement of discharge.	
	Part I.C.13	Removed	Submit Form 2A	Removed to prevent redundant sampling. The parameters required to be tested in Part A.12 of Form 2A are limited or required to be monitored in the 2012 permit, with the exception of temperature. Therefore, interim effluent screening is not necessary after issuance of a CTO for the treatment works.	
	Part I.D	Removed	Bacterial Demonstration Study	DEQ no longer provides the option to use chlorine as a surrogate parameter for Enterococci. In addition, an Enterococci limitation will help to insure that discharge will neither cause nor contribute to the existing Recreational Use bacteria impairment for Broad Creek (see Item 25 of this fact sheet for impairment information).	
Changes to Cover Page	The structure and language of the cover page have been slightly modified in accordance with new agency procedures and for streamlining purposes. Signatory requirements have also changed in accordance with the October 2008 DEQ Agency Policy Statement 2-09, "Delegations of Authority". Facility location address changed to that indicated on the 2012 permit application (address confirmed as correct using Middlesex County's GIS website).				

22. Variances/Alternate Limits or Conditions: None.

23. Regulation of Users: 9VAC25-31-280 B 9: There are no industrial users contributing to the treatment works.

24. Public Notice Information required by 9 VAC 25-31-280 B:

Comment period: Start Date: June 14, 2012 End Date: July 16, 2012
Published Dates: June 14, 2012 and June 21, 2012
Name of Newspaper: *Southside Sentinel*

All pertinent information is on file and may be inspected or copied by contacting Jeremy Kazio at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5044
Facsimile Number 804/527-5106
Email Jeremy.Kazio@deq.virginia.gov

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period,

if public response is significant and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment, or may request copies of the documents from the contact person listed above.

25. 303(d) Impaired Waters / Total Maximum Daily Load (TMDL):

During the 2010 305(b)/303(d) Water Quality Assessment, Broad Creek was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). The Recreation Use is impaired due to enterococcus violations. The Aquatic Life Use is impaired because the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, failed the Open Water summer 30-day mean dissolved oxygen criteria. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use is fully supporting and the Fish Consumption Use was not assessed. The area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

The Broad Creek Shellfish TMDL was approved by the EPA on 6/7/2006 and by the SWCB on 6/27/2007. The facility was not addressed in the TMDL because the portion of Broad Creek to which the yacht club discharges is a prohibited zone and the Shellfish Use is considered to be removed.

Regatta Point Yacht Club was included in the Chesapeake Bay TMDL, which addressed dissolved oxygen, chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the mainstem Bay and its tidal tributaries. The TMDL was approved by the EPA on 12/29/2010.

a. *Chesapeake Bay TMDL*: This facility discharges directly to Broad Creek in the Chesapeake Bay watershed in the Rappahannock River mesohaline segment (RRPMH), which extends from a cross section of the river located at Mulberry Island, downstream to the mouth of the river, which extends from the southernmost tip of Fleets Island south to Stingray Point. The receiving stream has been addressed in the Chesapeake Bay TMDL, approved by EPA on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185.

Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820) as controlling the nutrient allocations for Chesapeake Bay dischargers. The approved WIP states that for non-significant Municipal and Industrial facilities, nutrient WLAs are to be consistent with Code of Virginia procedures. Code of Virginia procedures (§62.1-44.19:15.A.5) and DEQ regulations (9VAC25-820-70.G.1.c) require facilities treating domestic sewage with design flows greater than 1,000 gallons per day and up to 39,999 gallons per day that have not commenced discharge prior to January 1, 2011 to register for coverage under the General VPDES Watershed Permit and demonstrate they have acquired WLAs sufficient to offset their entire delivered nutrient loads for a period of at least five years. In accordance with the WIP, TN and TP (load-based) WLAs for non-significant facilities are considered aggregate allocations and will not be included in individual permits. The WIP also considers Total Suspended

Solids (TSS) WLAs for non-significant facilities to be aggregate allocations, but TSS limits are to be included in individual permits in conformance with the technology-based requirements of the Clean Water Act. However, the WIP recognizes that so long as the aggregated TSS permitted loads for all dischargers is less than the aggregated TSS load in the WIP, the individual permit will be consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is considered a new non-significant Chesapeake Bay discharger because the facility did not commence discharge prior to January 1, 2011, and has a permitted design flow of greater than 1,000 gallons per day and less than 100,000 gallons per day into tidal waters.

The facility owner has registered for coverage under the VPDES Nutrient General Permit (GP). DEQ will provide coverage under the VPDES Nutrient General Permit (GP) for this facility under permit VAN0020157 upon issuance of this individual permit. The requirements of the Nutrient GP for this facility will be consistent with the Chesapeake Bay TMDL.

The permittee has indicated there is no present plan to construct a treatment facility and to begin discharging during the five-year terms of the VPDES individual and Nutrient General Permit. Consequently, during the term of this individual permit, there will be no anticipated discharge of Total Nitrogen or Total Phosphorus requiring offset in accordance with 9VAC25-820-70.H.1.e. This nutrient offset plan satisfies statutory and regulatory requirements for the delivered nutrient loads from discharges of new facilities to be entirely offset, and is consistent with the Chesapeake Bay WIP and TMDL.

The discharge was mistakenly included in the aggregated total nitrogen, total phosphorus, and total suspended solids (TSS) wasteload allocations for non-significant wastewater dischargers in the Corrotoman River mesohaline estuary (CRRMH) instead of in the Rappahannock River mesohaline segment (RRPMH). DEQ Central Office staff were made aware of the error and indicated “this will be corrected as part of the refinement to the Bay TMDL. It is appropriate to issue these permits” (Cunningham, email dated 4/13/2011).

This individual permit includes technology-based TSS limits of 30 mg/L that are also consistent with the Chesapeake Bay TMDL and WIP. In addition, the individual permit has BOD_5 and DO effluent limits of 30 mg/L and 5.0 mg/L, respectively, which provide protection of instream DO concentrations to at least 5.0 mg/L. Implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient tidal conditions such that the proposed effluent limits of this individual permit are consistent with the Chesapeake Bay TMDL, and will not cause an impairment or observed violation of the standards for DO, chlorophyll a, or SAV as required by 9VAC25-260-185.

b. *Dissolved Oxygen (DO):* The 2012 permit has limitations of 30 mg/L BOD_5, and minimum 5 mg/L for DO (based on 9 VAC 25-151-50 of the *Water Quality Standards*) as recommended in the most current Stream Sanitation Analysis. These limitations were determined to be protective of water quality within the receiving stream, and therefore, the proposed facility is not expected to cause nor contribute to the existing DO impairment in the Rappahannock River mesohaline estuary.

c. *Enterococci:* The 2012 permit has a limitation for enterococci (35N/100 mL monthly geometric mean) which is equal to the Water Quality Standard (see Item 16 of this fact

sheet). Therefore, the facility, when it begins discharging, is not expected to contribute to the current Recreation Use enterococci impairment.

d. *Broad Creek Shellfish TMDL:* As stated above, this facility was not included in the Broad Creek Shellfish TMDL because the shellfish use is considered to be removed at the discharge point. Regardless, a limitation for fecal coliform has been included in the 2012 permit to address protection of the shellfish use (see Item 16 of this fact sheet).

26. Additional Comments:

a. Previous Board Action: None

b. Staff Comments:

- One of this facility's SIC codes (4493) designates it as a marina, which is an industrial sector that is subject to regulation under DEQ's Industrial Storm Water General Permit (ISWGP). However, the specific activities which are regulated by the ISWGP (i.e. dry dock, boat maintenance, and/or boat repair) are not conducted onsite, and therefore regulation of the storm water runoff from these activities is not required. The 2012 permit also requires (see Part I.C.2 and Part I.C.8) the permittee to implement Best Management Practices for all activities onsite in order to prevent discharge of wastes to State waters. Additionally, facilities treating domestic effluent which discharge greater than or equal to 1.0 MGD are subject to storm water requirements, but since this facility's design flow is 0.030 MGD, storm water requirements are not applicable.

- A monitoring frequency reduction was not considered for this facility because it is not yet constructed.

- The permittee's Financial Assurance obligations are not yet applicable.

- The permittee is not a participant in Virginia's Environmental Excellence Program.

- Coordination with the Virginia Department of Health –Division of Shellfish Sanitation indicated that the existing discharge would not cause any change to the existing shellfish closures within this facility's receiving water body.

- This permit reissuance is non-controversial. The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.

- The discharge is in conformance with the existing planning documents for the area.

- EPA has waived the right to comment and/or object to the adequacy of the permit.

- The permittee is current on his annual maintenance fees (confirmed via email by J.Newcomb on 3/29/2012.

- The permittee was notified of the expectation to participate in the e-DMR program on 10/18/2010. The permittee is not currently submitting DMR's due to not having a discharge, and therefore has not yet enrolled in the e-DMR program.

- A copy of the public notice for the 2012 permit reissuance was mailed to the Regional Planning District Commission, the County Administrator, and the Chairman of the Board of Supervisors on June 7, 2012. No comments regarding the permit action were received.

- The 2012 permit expiration date is shortened from a 5-year expiration of July 29, 2017 to June 30, 2017, in order for the next permit term to start with a complete calendar month.

c. Public Comments: No comments were received during the public comment period.

27. Summary of attachments to this fact sheet:

Attachment A	Flow Frequency Memorandum and 303(d) Fact Sheets
Attachment B	Flow Diagram
Attachment C	Topographic Map & Aerial Photograph
Attachment D	Site Inspection Report
Attachment E	Ambient and Effluent Data Used for Limitation Evaluations
Attachment F	2012 and 2007 MSTRANTI and STATS Printouts
Attachment G	2007 Stream Sanitation Analysis, 1992 Stream Model, Federal Effluent Guideline
Attachment H	Watershed General Permit Registration Statement and Offset Plan

Attachment A

Flow Frequency Memorandum and 303(d) Fact Sheets

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Regatta Point Yacht Club STP – VA0090921

TO: Jeremy Kazio

FROM: Jennifer Palmore, P.G.

DATE: February 23, 2012

COPIES: File

The Regatta Point Yacht Club's sewage treatment plant is permitted to discharge to Broad Creek near Stingray Point, VA. The rivermile for the facility is 3-BRD000.37. Flow frequencies have been requested at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

Broad Creek is tidally influenced at the discharge point. Flow frequencies cannot be determined for tidal waters; therefore previous modeling and dilution ratios should be used to evaluate the effluent's impact on the water body. The Water Quality Standards designate Broad Creek as estuarine waters; therefore, saltwater criteria should be used.

During the 2010 305(b)/303(d) Water Quality Assessment, Broad Creek was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a TMDL (303d list)."). The applicable fact sheets are attached. The Recreation Use is impaired due to enterococcus violations. The Aquatic Life Use is impaired because the mesohaline Rappahannock River estuary, which includes tidal Broad Creek, failed the Open Water summer 30-day mean dissolved oxygen criteria. In addition, Broad Creek had a NOAA ER-M screening-value exceedance for copper and zinc in sediment on 9/5/1997; this is considered a non-impairing observed effect. The Wildlife Use is fully supporting and the Fish Consumption Use was not assessed. The area is under a VDH shellfish harvest prohibition due to the presence of multiple dischargers; therefore the Shellfish Use is considered removed.

Water quality data from monitoring station 3-BRD000.31 is attached. The station is located on Broad Creek at the end of Route 636, which is across the stream from Regatta Point Yacht Club.

Broad Creek has historically been considered a Tier 2 water because previous modeling determined that "the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable (sic) effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to a least an aggregate flow of 1.0 MGD" (Phillips, 1992). However, the Rappahannock Mesohaline estuary is impaired due to dissolved oxygen violations, as discussed above. Review of local monitoring data from station 3-BRD000.31 shows that on two occasions dissolved oxygen values were at or only slightly above 5.0 mg/L. Due to this the stream should be considered Tier 1.

The Broad Creek Shellfish TMDL was approved by the EPA on 6/7/2006 and by the SWCB on 6/27/2007. The facility was not addressed in the TMDL because the portion of Broad Creek to which the yacht club discharges is a prohibited zone and the Shellfish Use is considered to be removed.

Regatta Point Yacht Club was included in the Chesapeake Bay TMDL, which addressed dissolved oxygen, chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the mainstem Bay and its

tidal tributaries. The TMDL was approved by the EPA on 12/29/2010. The discharge was mistakenly included in the aggregated total nitrogen, total phosphorus, and total suspended solids (TSS) wasteload allocations for non-significant wastewater dischargers in the Corrotoman River mesohaline estuary (CRRMH) instead of in the Rappahannock River mesohaline segment (RRPMH). DEQ Central Office staff were made aware of the error and indicated that "this will be corrected as part of the refinement to the Bay TMDL. It is appropriate to issue these permits" (Cunningham, email dated 4/13/2011). The nutrient allocations are administered through the Watershed Nutrient General Permit; the TSS allocations are considered aggregated and facilities with technology-based TSS limits are considered to be in conformance with the TMDL.

If you have any questions concerning this analysis, please let me know.

2010 Fact Sheets for 303(d) Waters

RIVER BASIN: Rappahannock River Basin **HYDROLOGIC UNIT:** 02080104

STREAM NAME: **Rappahannock River**

TMDL ID: **RPPMH-DO-BAY** **2010 IMPAIRED AREA ID:** CB-RPPMH

ASSESSMENT CATEGORY: 5A **TMDL DUE DATE:** 2010

IMPAIRED SIZE: 123.53 - Sq. Mi. **Watershed:** VAP-E22E

INITIAL LISTING: 1998

UPSTREAM LIMIT: Mesohaline boundary

DOWNSTREAM LIMIT: Mouth at Chesapeake Bay

The mesohaline Rappahannock River and tidal tributaries.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting, Open Water Subuse - Not Supporting, Deep Water Subuse - Not Supporting, Deep Channel Use - Fully Supporting

IMPAIRMENT: Dissolved Oxygen

The mainstem of the Rappahannock River from Myrtle Swamp to its mouth was originally listed in 1998 by DEQ due to dissolved oxygen exceedances and nutrient overenrichment. The EPA extended the segment upstream to the confluence with Totuskey Creek. In the 2004 cycle dissolved oxygen exceedances were noted in deepwater and deep channel stations downstream of the confluence with Lancaster Creek (Morattico), which is further downstream.

The new Chesapeake Bay Water Quality Standards were implemented during the 2006 cycle. The mesohaline portion of the Rappahannock fails the Open Water Subuse's summer 30-day dissolved oxygen criteria and applicable areas fail the Deep Water 30-day dissolved oxygen criteria. During the 2008 cycle, the Deep Channel Subuse's instantaneous minimum dissolved oxygen criteria was violated, however the segment met the use during the 2010 cycle and will be delisted. The Open Water Subuse's 30-day rest-of-year standard was met and there was insufficient data to assess the other dissolved oxygen criteria.

IMPAIRMENT SOURCE: Point Source, Nonpoint Source

Tributary strategy has been developed.

RECOMMENDATION: Problem Characterization

2010 Fact Sheets for 303(d) Waters

RIVER BASIN: Rappahannock River Basin **HYDROLOGIC UNIT:** 02080104

STREAM NAME: **Broad Creek**

TMDL ID: **E26E-20-BAC** **2010 IMPAIRED AREA ID:** CB-RPPMH

ASSESSMENT CATEGORY: 5A **TMDL DUE DATE:** 2018

IMPAIRED SIZE: 0.161 - Sq. Mi. **Watershed:** VAP-E26E

INITIAL LISTING: 2006

UPSTREAM LIMIT: Tidal limit

DOWNSTREAM LIMIT: Mouth at Rappahannock

The tidal Broad Creek embayment.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Recreation Use - Not Supporting

IMPAIRMENT: Enterococci

Broad Creek was considered fully supporting but threatened of the Recreation Use in 1998 due to BPJ (6 dischargers into embayment), but there were acceptable fecal coliform exceedance rates in both the 2002 and 2004 cycles, so it was dropped in 2004.

In the 2006 cycle, the fecal coliform exceedance rate remained acceptable (0/23), however the enterococci exceedance rate failed, therefore the segment was considered impaired of the Recreation Use. The impairment continues in the 2010 cycle due to an Enterococci exceedance rate of 3/27. The TMDL is due in 2018.

IMPAIRMENT SOURCE: Nonpoint Sources

The source is considered unknown.

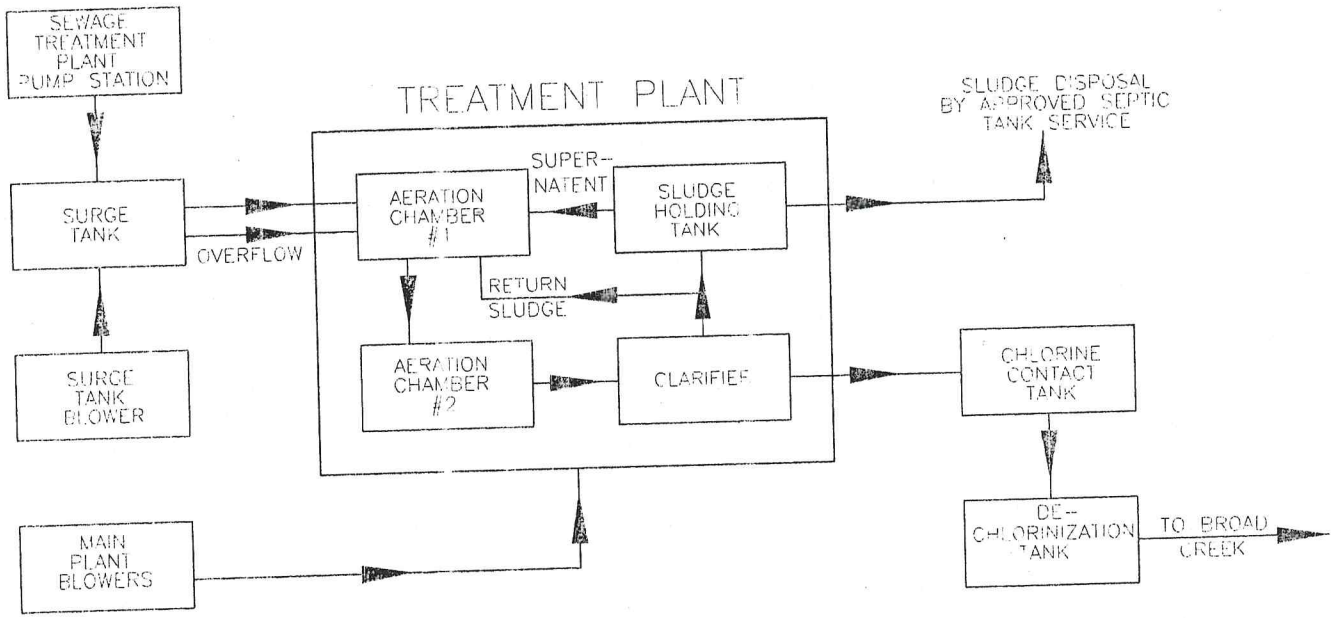
RECOMMENDATION: Problem Characterization

Attachment B

Flow Diagram

DESIGN: S.F.C. | DRAFT: R.D.M. | CHECK:

SHEET NO.: 1 | JOB NO.: 01199-01



REGATTA POINT TREATMENT PROCESS

SCALE: N.T.S.

BAY DESIGN GROUP
Engineering, Surveying & Land Planning

www.baydesigngroup.com

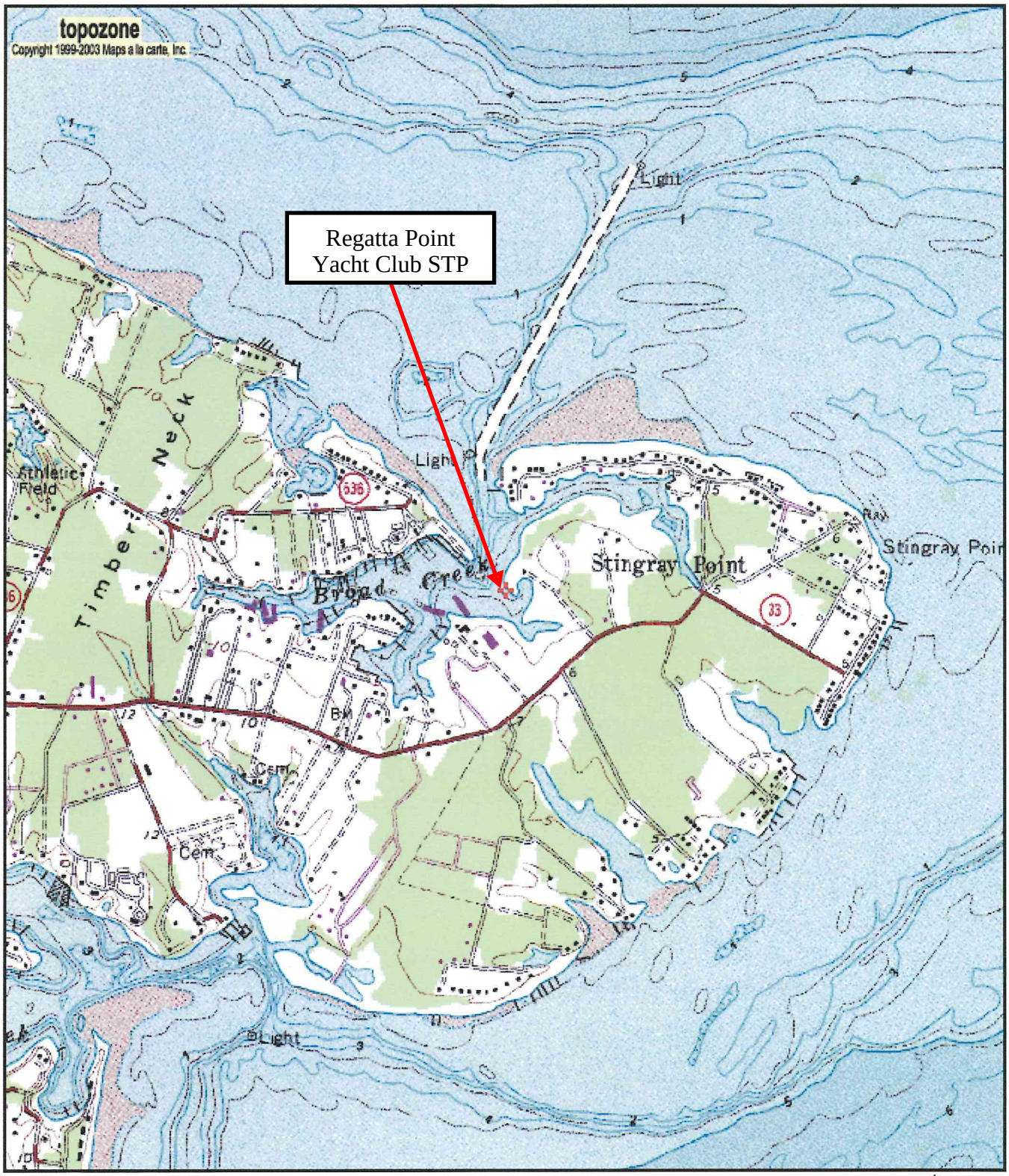
RICHMOND 9415--A ATLEE COMMERCE CENTER BLVD. ASHLAND, VA 23005 804--550--4855 (F)804-550--4857

TIDEWATER 7307 MARTIN STREET BOX 895 GLOUCESTER VA 23061 804--693--2993 (F)804--693--5596

MIDDLE PENINSULA BUSINESS ROUTE 17 NORTH BOX 509 SALUDA VA 23149 804-758--5678 (F)804--758--5920

Attachment C

Topographic Map & Aerial Photograph



37° 33' 31"N, 76° 18' 46"W (NAD83/WGS84)

Chesapeake Cove Marina, USGS Deltaville (VA) Quadrangle

Projection is UTM Zone 18 NAD83 Datum


Rte 636
State Route 640
State Route 639
Riverside Dr
State Route 688
Marina Dr
Perry's
Neptune Ln, Pine Top, VA 23043
33
General Puller Hwy
654
Corbett Ln
Dockside Dr
Shirley Ave
VA0090921
Regatta Point Yacht
Club STP - Outfall 001
© 2012 Google
Image © 2012 Commonwealth of Virginia
1438 ft
©2009 Google
Imagery Date: Feb 1, 2007
lat 37.558844° lon -76.313097°
Eye alt 4974 ft

Attachment D

Site Inspection Report

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

4949-A Cox Road **Glen Allen, VA 23060-6295** **804/527-5020**

SUBJECT: Regatta Point Yacht Club, Middlesex Co. (VA#0090921)

TO: File

FROM: Heather A. Horne

DATE: May 1, 2008

COPIES: Owner, DEQ-PRO (R/R file), OWPS

An unannounced technical inspection was conducted on April 29, 2008 (1139-1158 hrs) by Inspectors, Heather Horne and Meredith Williams to determine the current on site status. We met Mr. Arthur Crowther while on site. The VPDES Permit was issued for a wastewater treatment plant which has not been constructed. The site is currently using an on site subsurface disposal system (i.e, septic tank and sand filter). There was no evidence of problems.

Regatta Point Boat House

Boat pump out system


Vicinity of future wastewater treatment plant (behind parking area)

Attachment E

Ambient and Effluent Data Used for Limitation Evaluations

Data from Broad Creek Monitoring Station 3-BRD000.31

Regatta Point Yacht Club STP - VA0090921 (2012 Permit)

Collection Date	Depth (m.)	Temp. (°C)	Field pH (SU)	Dissolved Oxygen (mg/L)	Salinity (g/kg)
5/24/2007	0.3	20.3	7.5	7.7	12.2
7/19/2007	0.3	28.5	7.3	6.5	16.5
9/20/2007	0.3	21.8	7.6	5.2	19.6
12/6/2007	0.3	5.7	7.8	11.8	20.1
1/31/2008	0.3	5.9	7.6	10.5	18
3/27/2008	0.3	11.9	7.5	8.8	17
6/3/2008	0.3	24.4	7.5	8.4	11.6
7/24/2008	0.3	29	8	6.7	15.2
9/29/2008	0.3	23.3	8.1	8.4	17.4
11/17/2008	0.3	12.1	7.9	9	19.8
2/18/2009	0.3	5.7	7.4	10.8	17.4
5/4/2009	0.3	19.6	7.9	8.2	15.5
6/15/2009	0.3	26	7.8	5.8	15
8/31/2009	0.3	27.3	7.7	5	16.8
10/26/2009	0.3	16.2	8	8.9	18.3
12/28/2009	0.3	7	7.8	13.2	13.2
1/12/2010	0.3	1.3	7.4	14.5	12.1
3/23/2010	0.3	11	8.2	11.9	10.1
5/20/2010	0.3	19.7	7.8	9.6	11.7
7/28/2010	0.3	29.9	8.1	6.5	15.9
9/30/2010	0.3	23	7.4	6.5	16.2
11/15/2010	0.3	11.9	7.3	8.7	17.9
90th Percentile		**28.4**	**8.1**		
10th Percentile		**5.7**	**7.4**		
Average					**15.8**

pH Data from Bay Marine Ltd. Sewage Treatment Plant - VA0087173

DMR Received Date	Minimum pH (SU)	Maximum pH (SU)
13-Jan-09	7.06	7.12
12-Feb-09	6.96	7.04
12-Mar-09	6.97	7.09
14-Apr-09	7.02	7.14
11-May-09	7.04	7.13
11-Jun-09	7.07	7.12
13-Jul-09	7.08	7.14
10-Aug-09	6.98	7.06
11-Sep-09	7.03	7.11
13-Oct-09	7.03	7.12
10-Nov-09	7.05	7.12
11-Dec-09	7.06	7.14
8-Jan-10	7.02	7.06
11-Jun-10	7.03	7.14
12-Jul-10	7.09	7.21
12-Aug-10	7.17	7.24
13-Sep-10	7.16	7.23
12-Nov-10	7.12	7.17
13-Dec-10	7.08	7.12
14-Apr-11	7.02	7.08
11-May-11	7.08	7.12
7-Jul-11	7	7.69
10-Nov-11	6.95	7.38
6-Dec-11	6.7	7.43
90th Percentile	**7.11**	**7.34**
10th Percentile	**6.96**	**7.07**

Attachment F

2012 and 2007 MSTRANTI and STATS Printouts

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Regatta Point Yacht Club STP Permit No.: VA0090921 Version: OWP Guidance Memo 00-2011 (8/24/00)
Receiving Stream: Broad Creek

Stream Information		
Mean Hardness (as CaCO3) =	N/A	mg/l
90th % Temperature (Annual) =	28.4	(° C)
10th % Temperature (Annual) =	5.7	(° C)
90th % Temperature (Winter) =	N/A	(° C)
90th % Maximum pH =	8.1	
10th % Maximum pH =	7.4	
Tier Designation (1 or 2) =	1	
Early Life Stages Present Y/N =	Y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	15.8	(g/kg)

Mixing Information	
Design Flow (MGD)	**0.03**
Acute WLA multiplier	2
Chronic WLA multiplier	50
Human health WLA multiplier	50

Effluent Information		
Mean Hardness (as CaCO3) =	N/A	mg/L
90 % Temperature (Annual) =	28	(° C)
90 % Temperature (Winter) =	N/A	(° C)
90 % Maximum pH =	7.34	SU
10 % Maximum pH =	7.07	SU
Heated Discharge? (Y/N)	N	
Discharge Flow =	**0.03**	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	9.9E+02	--	--	5.0E+04	--	--	--	--	--	--	**--**	**--**	**5.0E+04**
Acrolein	0	--	--	9.3E+00	--	--	4.7E+02	--	--	--	--	--	--	**--**	**--**	**4.7E+02**
Acrylonitrile[C]	0	--	--	2.5E+00	--	--	1.3E+02	--	--	--	--	--	--	**--**	**--**	**1.3E+02**
Aldrin [C]	0	1.3E+00	--	5.0E-04	2.6E+00	--	2.5E-02	--	--	--	--	--	--	**2.6E+00**	**--**	**2.5E-02**
Ammonia-N (mg/l) - Annual	0	7.67E+00	4.06E-01	--	1.53E+01	2.03E+01	--	--	--	--	--	--	--	**1.53E+01**	**2.03E+01**	**--**
Ammonia-N (mg/l) - Winter	0	#VALUE!	#VALUE!	--	#VALUE!	#VALUE!	--	--	--	--	--	--	--	**#VALUE!**	**#VALUE!**	**--**
Anthracene	0	--	--	4.0E+04	--	--	2.0E+06	--	--	--	--	--	--	**--**	**--**	**2.0E+06**
Antimony	0	--	--	6.4E+02	--	--	3.2E+04	--	--	--	--	--	--	**--**	**--**	**3.2E+04**
Arsenic	0	6.9E+01	3.6E+01	--	1.4E+02	1.8E+03	--	--	--	--	--	--	--	**1.4E+02**	**1.8E+03**	**--**
Benzene [C]	0	--	--	5.1E+02	--	--	2.6E+04	--	--	--	--	--	--	**--**	**--**	**2.6E+04**
Benzidine[C]	0	--	--	2.0E-03	--	--	1.0E-01	--	--	--	--	--	--	**--**	**--**	**1.0E-01**
Benzo (a) anthracene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (b) fluoranthene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (k) fluoranthene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Benzo (a) pyrene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Bis2-Chloroethyl Ether[C]	0	--	--	5.3E+00	--	--	2.7E+02	--	--	--	--	--	--	**--**	**--**	**2.7E+02**
Bis2-Chloroisopropyl Ether	0	--	--	6.5E+04	--	--	3.3E+06	--	--	--	--	--	--	**--**	**--**	**3.3E+06**
Bis2-Ethylhexyl Phthalate[C]	0	--	--	2.2E+01	--	--	1.1E+03	--	--	--	--	--	--	**--**	**--**	**1.1E+03**
Bromoform [C]	0	--	--	1.4E+03	--	--	7.0E+04	--	--	--	--	--	--	**--**	**--**	**7.0E+04**
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	9.5E+04	--	--	--	--	--	--	**--**	**--**	**9.5E+04**
Cadmium	0	4.0E+01	8.8E+00	--	8.0E+01	4.4E+02	--	--	--	--	--	--	--	**8.0E+01**	**4.4E+02**	**--**
Carbon Tetrachloride [C]	0	--	--	1.6E+01	--	--	8.0E+02	--	--	--	--	--	--	**--**	**--**	**8.0E+02**
Chlordane [C]	0	9.0E-02	4.0E-03	8.1E-03	1.8E-01	2.0E-01	4.1E-01	--	--	--	--	--	--	**1.8E-01**	**2.0E-01**	**4.1E-01**
TRC	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	2.6E+01	3.8E+02	--	--	--	--	--	--	--	**2.6E+01**	**3.8E+02**	**--**
Chlorobenzene	0	--	--	1.6E+03	--	--	8.0E+04	--	--	--	--	--	--	**--**	**--**	**8.0E+04**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Chlorodibromomethane[C]	0	--	--	1.3E+02	--	--	6.5E+03	--	--	--	--	--	--	**--**	**--**	**6.5E+03**
Chloroform	0	--	--	1.1E+04	--	--	5.5E+05	--	--	--	--	--	--	**--**	**--**	**5.5E+05**
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	8.0E+04	--	--	--	--	--	--	**--**	**--**	**8.0E+04**
2-Chlorophenol	0	--	--	1.5E+02	--	--	7.5E+03	--	--	--	--	--	--	**--**	**--**	**7.5E+03**
Chlorpyrifos	0	1.1E-02	5.6E-03	--	2.2E-02	2.8E-01	--	--	--	--	--	--	--	**2.2E-02**	**2.8E-01**	**--**
Chromium III	0			--			--	--	--	--	--	--	--	**--**	**--**	**--**
Chromium VI	0	1.1E+03	5.0E+01	--	2.2E+03	2.5E+03	--	--	--	--	--	--	--	**2.2E+03**	**2.5E+03**	**--**
Chrysene [C]	0	--	--	1.8E-02	--	--	9.0E-01	--	--	--	--	--	--	**--**	**--**	**9.0E-01**
Copper	0	9.3E+00	6.0E+00	--	1.9E+01	3.0E+02	--	--	--	--	--	--	--	**1.9E+01**	**3.0E+02**	**--**
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	2.0E+00	5.0E+01	8.0E+05	--	--	--	--	--	--	**2.0E+00**	**5.0E+01**	**8.0E+05**
DDD [C]	0	--	--	3.1E-03	--	--	1.6E-01	--	--	--	--	--	--	**--**	**--**	**1.6E-01**
DDE [C]	0	--	--	2.2E-03	--	--	1.1E-01	--	--	--	--	--	--	**--**	**--**	**1.1E-01**
DDT [C]	0	1.3E-01	1.0E-03	2.2E-03	2.6E-01	5.0E-02	1.1E-01	--	--	--	--	--	--	**2.6E-01**	**5.0E-02**	**1.1E-01**
Demeton	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Diazinon	0	8.2E-01	8.2E-01	--	1.6E+00	4.1E+01	--	--	--	--	--	--	--	**1.6E+00**	**4.1E+01**	**--**
Dibenz(a,h)anthracene [C]	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	6.5E+04	--	--	--	--	--	--	**--**	**--**	**6.5E+04**
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	4.8E+04	--	--	--	--	--	--	**--**	**--**	**4.8E+04**
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	9.5E+03	--	--	--	--	--	--	**--**	**--**	**9.5E+03**
3,3-Dichlorobenzidine[C]	0	--	--	2.8E-01	--	--	1.4E+01	--	--	--	--	--	--	**--**	**--**	**1.4E+01**
Dichlorobromomethane [C]	0	--	--	1.7E+02	--	--	8.5E+03	--	--	--	--	--	--	**--**	**--**	**8.5E+03**
1,2-Dichloroethane [C]	0	--	--	3.7E+02	--	--	1.9E+04	--	--	--	--	--	--	**--**	**--**	**1.9E+04**
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	3.6E+05	--	--	--	--	--	--	**--**	**--**	**3.6E+05**
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	5.0E+05	--	--	--	--	--	--	**--**	**--**	**5.0E+05**
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	1.5E+04	--	--	--	--	--	--	**--**	**--**	**1.5E+04**
1,2-Dichloropropane[C]	0	--	--	1.5E+02	--	--	7.5E+03	--	--	--	--	--	--	**--**	**--**	**7.5E+03**
1,3-Dichloropropene[C]	0	--	--	2.1E+02	--	--	1.1E+04	--	--	--	--	--	--	**--**	**--**	**1.1E+04**
Dieldrin [C]	0	7.1E-01	1.9E-03	5.4E-04	1.4E+00	9.5E-02	2.7E-02	--	--	--	--	--	--	**1.4E+00**	**9.5E-02**	**2.7E-02**
Diethyl Phthalate	0	--	--	4.4E+04	--	--	2.2E+06	--	--	--	--	--	--	**--**	**--**	**2.2E+06**
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	4.3E+04	--	--	--	--	--	--	**--**	**--**	**4.3E+04**
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	5.5E+07	--	--	--	--	--	--	**--**	**--**	**5.5E+07**
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	2.3E+05	--	--	--	--	--	--	**--**	**--**	**2.3E+05**
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	2.7E+05	--	--	--	--	--	--	**--**	**--**	**2.7E+05**
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	1.4E+04	--	--	--	--	--	--	**--**	**--**	**1.4E+04**
2,4-Dinitrotoluene [C]	0	--	--	3.4E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.1E-08	--	--	2.6E-06	--	--	--	--	--	--	**--**	**--**	**2.6E-06**
1,2-Diphenylhydrazine[C]	0	--	--	2.0E+00	--	--	1.0E+02	--	--	--	--	--	--	**--**	**--**	**1.0E+02**
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	6.8E-02	4.4E-01	4.5E+03	--	--	--	--	--	--	**6.8E-02**	**4.4E-01**	**4.5E+03**
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	6.8E-02	4.4E-01	4.5E+03	--	--	--	--	--	--	**6.8E-02**	**4.4E-01**	**4.5E+03**
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	6.8E-02	4.4E-01	--	--	--	--	--	--	--	**6.8E-02**	**4.4E-01**	**--**
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	4.5E+03	--	--	--	--	--	--	**--**	**--**	**4.5E+03**
Endrin	0	3.7E-02	2.3E-03	6.0E-02	7.4E-02	1.2E-01	3.0E+00	--	--	--	--	--	--	**7.4E-02**	**1.2E-01**	**3.0E+00**
Endrin Aldehyde	0	--	--	3.0E-01	--	--	1.5E+01	--	--	--	--	--	--	**--**	**--**	**1.5E+01**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Ethylbenzene	0	--	--	2.1E+03	--	--	1.1E+05	--	--	--	--	--	--	**--**	**--**	**1.1E+05**
Fluoranthene	0	--	--	1.4E+02	--	--	7.0E+03	--	--	--	--	--	--	**--**	**--**	**7.0E+03**
Fluorene	0	--	--	5.3E+03	--	--	2.7E+05	--	--	--	--	--	--	**--**	**--**	**2.7E+05**
Guthion	0	--	1.0E-02	--	--	5.0E-01	--	--	--	--	--	--	--	**--**	**5.0E-01**	**--**
Heptachlor [C]	0	5.3E-02	3.6E-03	7.9E-04	1.1E-01	1.8E-01	4.0E-02	--	--	--	--	--	--	**1.1E-01**	**1.8E-01**	**4.0E-02**
Heptachlor Epoxide[C]	0	5.3E-02	3.6E-03	3.9E-04	1.1E-01	1.8E-01	2.0E-02	--	--	--	--	--	--	**1.1E-01**	**1.8E-01**	**2.0E-02**
Hexachlorobenzene[C]	0	--	--	2.9E-03	--	--	1.5E-01	--	--	--	--	--	--	**--**	**--**	**1.5E-01**
Hexachlorobutadiene[C]	0	--	--	1.8E+02	--	--	9.0E+03	--	--	--	--	--	--	**--**	**--**	**9.0E+03**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	4.9E-02	--	--	2.5E+00	--	--	--	--	--	--	**--**	**--**	**2.5E+00**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	1.7E-01	--	--	8.5E+00	--	--	--	--	--	--	**--**	**--**	**8.5E+00**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	1.6E-01	--	1.8E+00	3.2E-01	--	9.0E+01	--	--	--	--	--	--	**3.2E-01**	**--**	**9.0E+01**
Hexachlorocyclopentadiene	0	--	--	1.1E+03	--	--	5.5E+04	--	--	--	--	--	--	**--**	**--**	**5.5E+04**
Hexachloroethane[C]	0	--	--	3.3E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Hydrogen Sulfide	0	--	2.0E+00	--	--	1.0E+02	--	--	--	--	--	--	--	**--**	**1.0E+02**	**--**
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	9.0E+00	--	--	--	--	--	--	**--**	**--**	**9.0E+00**
Isophorone[C]	0	--	--	9.6E+03	--	--	4.8E+05	--	--	--	--	--	--	**--**	**--**	**4.8E+05**
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Lead	0	2.4E+02	9.3E+00	--	4.8E+02	4.7E+02	--	--	--	--	--	--	--	**4.8E+02**	**4.7E+02**	**--**
Malathion	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Mercury	0	1.8E+00	9.4E-01	--	3.6E+00	4.7E+01	--	--	--	--	--	--	--	**3.6E+00**	**4.7E+01**	**--**
Methyl Bromide	0	--	--	1.5E+03	--	--	7.5E+04	--	--	--	--	--	--	**--**	**--**	**7.5E+04**
Methylene Chloride [C]	0	--	--	5.9E+03	--	--	3.0E+05	--	--	--	--	--	--	**--**	**--**	**3.0E+05**
Methoxychlor	0	--	3.0E-02	--	--	1.5E+00	--	--	--	--	--	--	--	**--**	**1.5E+00**	**--**
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	**--**	**0.0E+00**	**--**
Nickel	0	7.4E+01	8.2E+00	4.6E+03	1.5E+02	4.1E+02	2.3E+05	--	--	--	--	--	--	**1.5E+02**	**4.1E+02**	**2.3E+05**
Nitrobenzene	0	--	--	6.9E+02	--	--	3.5E+04	--	--	--	--	--	--	**--**	**--**	**3.5E+04**
N-Nitrosodimethylamine[C]	0	--	--	3.0E+01	--	--	1.5E+03	--	--	--	--	--	--	**--**	**--**	**1.5E+03**
N-Nitrosodiphenylamine[C]	0	--	--	6.0E+01	--	--	3.0E+03	--	--	--	--	--	--	**--**	**--**	**3.0E+03**
N-Nitrosodi-n-propylamine[C]	0	--	--	5.1E+00	--	--	2.6E+02	--	--	--	--	--	--	**--**	**--**	**2.6E+02**
Nonylphenol	0	7.0E+00	1.7E+00	--	1.4E+01	8.5E+01	--	--	--	--	--	--	--	**1.4E+01**	**8.5E+01**	**--**
Parathion	0	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**	**--**
PCB Total[C]	0	--	3.0E-02	6.4E-04	--	1.5E+00	3.2E-02	--	--	--	--	--	--	**--**	**1.5E+00**	**3.2E-02**
Pentachlorophenol [C]	0	1.3E+01	7.9E+00	3.0E+01	2.6E+01	4.0E+02	1.5E+03	--	--	--	--	--	--	**2.6E+01**	**4.0E+02**	**1.5E+03**
Phenol	0	--	--	8.6E+05	--	--	4.3E+07	--	--	--	--	--	--	**--**	**--**	**4.3E+07**
Phosphorus (Elemental)	0	--	1.0E-01	--	--	5.0E+00	--	--	--	--	--	--	--	**--**	**5.0E+00**	**--**
Pyrene	0	--	--	4.0E+03	--	--	2.0E+05	--	--	--	--	--	--	**--**	**--**	**2.0E+05**
Selenium	0	2.9E+02	7.1E+01	4.2E+03	5.8E+02	3.6E+03	2.1E+05	--	--	--	--	--	--	**5.8E+02**	**3.6E+03**	**2.1E+05**
Silver	0	1.9E+00	--	--	3.8E+00	--	--	--	--	--	--	--	--	**3.8E+00**	**--**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	4.0E+01	--	--	2.0E+03	--	--	--	--	--	--	**--**	**--**	**2.0E+03**
Tetrachloroethylene[C]	0	--	--	3.3E+01	--	--	1.7E+03	--	--	--	--	--	--	**--**	**--**	**1.7E+03**
Thallium	0	--	--	4.7E-01	--	--	2.4E+01	--	--	--	--	--	--	**--**	**--**	**2.4E+01**
Toluene	0	--	--	6.0E+03	--	--	3.0E+05	--	--	--	--	--	--	**--**	**--**	**3.0E+05**

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Toxaphene [C]	0	2.1E-01	2.0E-04	2.8E-03	4.2E-01	1.0E-02	1.4E-01	--	--	--	--	--	--	**4.2E-01**	**1.0E-02**	**1.4E-01**
Tributyltin	0	4.2E-01	7.4E-03	--	8.4E-01	3.7E-01	--	--	--	--	--	--	--	**8.4E-01**	**3.7E-01**	**--**
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	3.5E+03	--	--	--	--	--	--	**--**	**--**	**3.5E+03**
1,1,2-Trichloroethane[C]	0	--	--	1.6E+02	--	--	8.0E+03	--	--	--	--	--	--	**--**	**--**	**8.0E+03**
Trichloroethylene [C]	0	--	--	3.0E+02	--	--	1.5E+04	--	--	--	--	--	--	**--**	**--**	**1.5E+04**
2,4,6-Trichlorophenol [C]	0	--	--	2.4E+01	--	--	1.2E+03	--	--	--	--	--	--	**--**	**--**	**1.2E+03**
Vinyl Chloride[C]	0	--	--	2.4E+01	--	--	1.2E+03	--	--	--	--	--	--	**--**	**--**	**1.2E+03**
Zinc	0	9.0E+01	8.1E+01	2.6E+04	1.8E+02	4.1E+03	1.3E+06	--	--	--	--	--	--	**1.8E+02**	**4.1E+03**	**1.3E+06**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific Target Value (SSTV)
Antimony	3.2E+04
Arsenic III	5.5E+01
Cadmium	3.2E+01
Chromium III	#VALUE!
Chromium VI	8.8E+02
Copper	7.4E+00
Lead	1.9E+02
Mercury	1.4E+00
Nickel	5.9E+01
Selenium	2.3E+02
Silver	1.5E+00
Zinc	7.2E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Temperature Screening: (Non-heated Discharge)

NOTE: The temperature screening below roughly evaluates the projected rise in temperature within the mixing zone during low flow conditions using 90%tile effluent temperature, and either 10%tile ambient temperature for heated discharges or 90%tile ambient temperature for non-heated discharges . If the projected rise in temperature exceeds the applicable temperature standard, further evaluation is necessary to determine a temperature limitation is warranted.

Acute - Maximum Allowable Rise Over Ambient = **2 ˚C**

Acute Mix Temperature (Non-heated Discharge)

$$\frac{((0.03\ \text{MGD} \times 28.4^{\circ}\text{C}) + (0.03\ \text{MGD} \times 28^{\circ}\text{C}))}{(0.06\ \text{MGD})} = 28.2\ ^{\circ}\text{C}$$

ΔT ˚C above ambient ► 28.2 ˚C - 28.4˚C = **0 ˚C**

Further Evaluation Needed? **NO**

Chronic - Maximum Allowable Rise Over Ambient = **3 ˚C**

Chronic Mix Temperature (Non-heated Discharge)

$$\frac{((1.47\ \text{MGD} \times 28.4^{\circ}\text{C}) + (0.03\ \text{MGD} \times 28^{\circ}\text{C}))}{(1.5\ \text{MGD})} = 28.39\ ^{\circ}\text{C}$$

ΔT ˚C above ambient ► 28.39 ˚C - 28.4˚C = **0 ˚C**

Further Evaluation Needed? **NO**

4/16/2012 10:07:11 AM

Facility = Regatta Point Yacht Club STP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 15.3
WLAc = 20.3
Q.L. = 0.20
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 15.3
Average Weekly limit = 15.3
Average Monthly LImit = 15.3

The data are:

9.0 mg/L

3/12/2012 10:27:16 AM

Facility = Regatta Point Yacht Club
Chemical = TRC (CPO)
Chronic averaging period = 4
WLAa = 26
WLAc = 380
Q.L. = 100
# samples/mo. = 30
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = 20000
Variance = 1440000
C.V. = 0.6
97th percentile daily values = 48668.3
97th percentile 4 day average = 33275.8
97th percentile 30 day average= 24121.0
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 26
Average Weekly limit = 15.8783873755527
Average Monthly LImit = 12.8861502605597

The data are:

20,000 µg/L

2007 Permit

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Regatta Point Yacht Club STP Permit No.: VA0090921 Version: OWP Guidance Memo 00-2011 (8/24/00)
Receiving Stream: Broad Creek

Stream Information		
Mean Hardness (as CaCO3) =	25	mg/l
90th % Temperature (Annual) =	28.1	(° C)
90th % Temperature (Winter) =		(° C)
90th % Maximum pH =	8.12	
10th % Maximum pH =	7.36	
Tier Designation (1 or 2) =	2	
Early Life Stages Present Y/N =	y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	15.8	(g/kg)

Mixing Information	
Design Flow (MGD)	0.03
Acute WLA multiplier	2
Chronic WLA multiplier	50
Human health WLA multiplier	50

Effluent Information		
Mean Hardness (as CaCO3) =	25	mg/L
90 % Temperature (Annual) =	24.9	(° C)
90 % Temperature (Winter) =		(° C)
90 % Maximum pH =	8.82	SU
10 % Maximum pH =	8.04	SU
Discharge Flow =	0.03	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	2.7E+03	--	--	1.4E+05	--	--	2.7E+02	--	--	1.4E+04	--	--	**1.4E+04**
Acrolein		--	--	7.8E+02	--	--	3.9E+04	--	--	7.8E+01	--	--	3.9E+03	--	--	**3.9E+03**
Acrylonitrile[c]		--	--	6.6E+00	--	--	3.3E+02	--	--	6.6E-01	--	--	3.3E+01	--	--	**3.3E+01**
Aldrin [c]	0	1.3E+00	--	1.4E-03	2.6E+00	--	7.0E-02	3.3E-01	--	1.4E-04	6.5E-01	--	7.0E-03	**6.5E-01**	--	**7.0E-03**
Ammonia-N (mg/l) - Annual	0	1.6E+00	3.6E-01	--	3.3E+00	1.8E+01	--	4.1E-01	9.0E-02	--	8.2E-01	4.5E+00	--	**8.2E-01**	**4.5E+00**	--
Ammonia-N (mg/l) - Winter	0	1.1E+01	2.7E+00	--	2.1E+01	1.4E+02	--	2.6E+00	6.8E-01	--	5.3E+00	3.4E+01	--	**5.3E+00**	**3.4E+01**	--
Anthracene	0	--	--	1.1E+05	--	--	5.5E+06	--	--	1.1E+04	--	--	5.5E+05	--	--	**5.5E+05**
Antimony	0	--	--	4.3E+03	--	--	2.2E+05	--	--	4.3E+02	--	--	2.2E+04	--	--	**2.2E+04**
Arsenic	0	6.9E+01	3.6E+01	--	1.4E+02	1.8E+03	--	1.7E+01	9.0E+00	--	3.5E+01	4.5E+02	--	**3.5E+01**	**4.5E+02**	--
Benzene [c]	0	--	--	7.1E+02	--	--	3.6E+04	--	--	7.1E+01	--	--	3.6E+03	--	--	**3.6E+03**
Benzidine[c]		--	--	5.4E-03	--	--	2.7E-01	--	--	5.4E-04	--	--	2.7E-02	--	--	**2.7E-02**
Benzo (a) anthracene [c]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	4.9E-02	--	--	2.5E+00	--	--	**2.5E+00**
Benzo (b) fluoranthene [c]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	4.9E-02	--	--	2.5E+00	--	--	**2.5E+00**
Benzo (k) fluoranthene [c]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	4.9E-02	--	--	2.5E+00	--	--	**2.5E+00**
Benzo (a) pyrene [c]	0	--	--	4.9E-01	--	--	2.5E+01	--	--	4.9E-02	--	--	2.5E+00	--	--	**2.5E+00**
Bis2-Chloroethyl Ether		--	--	1.4E+01	--	--	7.0E+02	--	--	1.4E+00	--	--	7.0E+01	--	--	**7.0E+01**
Bis2-Chloroisopropyl Ether		--	--	1.7E+05	--	--	8.5E+06	--	--	1.7E+04	--	--	8.5E+05	--	--	**8.5E+05**
Bromoform [c]	0	--	--	3.6E+03	--	--	1.8E+05	--	--	3.6E+02	--	--	1.8E+04	--	--	**1.8E+04**
Butylbenzylphthalate	0	--	--	5.2E+03	--	--	2.6E+05	--	--	5.2E+02	--	--	2.6E+04	--	--	**2.6E+04**
Cadmium	0	4.0E+01	8.8E+00	--	8.0E+01	4.4E+02	--	1.0E+01	2.2E+00	--	2.0E+01	1.1E+02	--	**2.0E+01**	**1.1E+02**	--
Carbon Tetrachloride [c]	0	--	--	4.4E+01	--	--	2.2E+03	--	--	4.4E+00	--	--	2.2E+02	--	--	**2.2E+02**
Chlordane [c]	0	9.0E-02	4.0E-03	2.2E-02	1.8E-01	2.0E-01	1.1E+00	2.3E-02	1.0E-03	2.2E-03	4.5E-02	5.0E-02	1.1E-01	**4.5E-02**	**5.0E-02**	**1.1E-01**
TRC	0			--			--	--	--	--	--	--	--	--	--	--
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	2.6E+01	3.8E+02	--	3.3E+00	1.9E+00	--	6.5E+00	9.4E+01	--	**6.5E+00**	**9.4E+01**	--

2007 Permit

5/7/2007 12:56:51 PM

Facility = Regatta Point Yacht Club
Chemical = CPO
Chronic averaging period = 4
WLAa = 0.0065
WLAc = 0.094
Q.L. = 0.1
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 20
Variance = 144
C.V. = 0.6
97th percentile daily values = 48.6683
97th percentile 4 day average = 33.2758
97th percentile 30 day average= 24.1210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 0.0065
Average Weekly limit = 3.87728305836444E-03
Average Monthly LImit = 3.22153756513991E-03

The data are:

20

The data value is created to force a limit in the program. An average monthly limit of 0.0030 mg/l is used in this permit as opposed to the STATS 2.0.4 limit of 0.0032 mg/l (above) in order to avoid backsliding from the current permit. The limit in the current permit is represented as only 1 significant digit, and current agency guidance states that the limit must be expressed in two significant digits.

2007 Permit

5/7/2007 9:21:23 AM

Facility = Regatta Point Yacht Club
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 0.82
WLAc = 4.5
Q.L. = 0.20
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 0.82
Average Weekly limit = 0.82
Average Monthly LImit = 0.82

The data are:

9

There is a large body of data relative to the concentration of Ammonia in domestic effluents. Analysis of those data indicate that the expected value is about 9.0 mg/l. Actual effluent data is not analyzed to make the determination if a limit is required.

Attachment G

2007 Stream Sanitation Analysis, 1992 Stream Model, Federal Effluent Guideline

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Stream Sanitation Analysis
Regatta Point Yacht Club – VA0090921

TO: Jeremy S. Kazio

FROM: Jennifer V. Palmore, P.G.

DATE: May 8, 2007

COPIES: File

A request for a stream sanitation analysis for the Regatta Point Yacht Club's sewage treatment plant was received on May 7, 2007. The discharge is located on Broad Creek, a tributary to the Rappahannock River, at river mile 3-BRD000.37. Although the plant has not yet been constructed, the facility is currently permitted at a design flow of 0.020 MGD. The permittee has requested a plant expansion up to a design flow of 0.030 MGD.

Background

Broad Creek was previously modeled by Dale Phillips in 1992 (see attached memorandum dated September 22, 1992.) There are currently six permitted VPDES discharges to Broad Creek; the modeling was performed to determine the effect of the discharges on the dissolved oxygen levels in the embayment. Three modeling approaches were used – a simple flushing model, a Tidal Prism model, and an AUTO$$ model. Due to rapid tidal flushing and the large dilution of the effluents, the models determined that "the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to a least an aggregate flow of 1.0 MGD." Due to this, Broad Creek has historically been considered a Tier 2 water.

Recommendations

When the Regatta Point Yacht Club plant is expanded, the effluent flows from the six dischargers will be as follows:

VA0090921	Regatta Point Yacht Club	0.030 MGD
VA0090913	Miller Marine, Inc.	0.005 MGD
VA0087173	Bay Marine, Ltd.	0.007 MGD
VA0087629	Dozier's Marine Center	0.0085 MGD
VA0087360	Kruse's Stingray Harbor Marina	0.006 MGD
VA0087611	Norview Marina	0.02 MGD

As the aggregated effluent flow equals only 0.0765 MGD, far less than the 1.0 MGD addressed in the original 1992 model, water-quality based effluent limits are not needed. Technology-based effluent limits should be used for the expanded discharge.

However, during the 2006 305(b)/303(d) Water Quality Assessments cycle, new dissolved oxygen criteria for the Chesapeake Bay and tidal tributaries were developed. These criteria are based on large salinity segments and are calculated through the use of interpolator models and cumulative frequency distributions. The mesohaline Rappahannock River estuary, which includes Broad Creek and all other tributaries entering that segment of the river, was considered impaired of the Open Water summer dissolved oxygen criteria. Although Broad Creek itself may have acceptable dissolved oxygen levels, the larger estuarine system shows evidence of dissolved oxygen depletion; therefore I recommend that dissolved oxygen limits be inserted into the permit. A monthly average minimum of 5.0 mg/L and an instantaneous minimum of 4.3 mg/L are recommended.

If you have any questions or need any additional information, please do not hesitate to contact me.

Attachment 3

M E M O R A N D U M

Virginia Water Control Board

Office of Water Resources Management

4900 Cox Road P.O. Box 11143 Richmond, Va.

STATE WATER CONTROL BOARD

SEP 28 1992

Tidewater Region
Kilmarnock Office

Subject: Broad Creek Model
To: E.R.Simmons, KRO
From: M.D.Phillips
Date: September 22, 1992
Copies:

I have looked at the Broad Creek situation and assessed several different modeling approaches, all give the same results. I looked at a simple flushing approach, a tidal prism approach and used AUTO$$ with very conservative parameters. All models agree that the discharge of conventional pollutants from the six small STPs proposed to the creek have no calculatable effect on the dissolved oxygen of the creek. In fact, the models indicate that this will be true to at least an aggregate flow of 1.0 MGD.

The models and approaches I have looked at are all limited because there is no data available. However, I did use very conservative assumptions and believe that the results are dependable. The basic reason for the lack of impact is essentially the rapid tidal flushing; I estimate that about 1/4 to 1/3 of the volumn of the creek is exchanged over each tidal period. This coupled with the very large dilution provided for the six small STP flows (6000 to 20,000 GPD for a total of about 60,000 GPD) results in essentially no impact.

I share your concern about the proliferation of small treatment plants at the marinas on this creek and believe that a central facility discharging outside the confines of Broad Creek would be much better in the long run. However, it appears that there will be little or no observable efects on the dissolved oxygen at this time.

I will only attach one model run (AUTO$$) as illustrative of the results. The bottom line is that we can assign secondary limits until the aggregate flows approach 1.0 MGD.

Regarding toxic material (ammonia, etc.), the models I used do not have the capability to look at mixing for toxics. Since the two existing and 4 proposed STPs are all surface discharges to saline waters I have no models to apply at this time. I would recommend that you simply use the guidance package recently provided for the implementation of toxics limits.

cc Rod Smith, Jim Utz

(d) *BOD*. The five day measure of the pollutant parameter biochemical oxygen demand (BOD).

(e) *$CBOD_5$*. The five day measure of the pollutant parameter carbonaceous biochemical oxygen demand ($CBOD_5$).

(f) *Effluent concentrations consistently achievable through proper operation and maintenance*. (1) For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least two years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions, and (2) a 7-day average value equal to 1.5 times the value derived under paragraph (f)(1) of this section.

(g) *Facilities eligible for treatment equivalent to secondary treatment*. Treatment works shall be eligible for consideration for effluent limitations described for treatment equivalent to secondary treatment (§ 133.105), if:

(1) The BOD_5 and SS effluent concentrations consistently achievable through proper operation and maintenance (§ 133.101(f)) of the treatment works exceed the minimum level of the effluent quality set forth in §§ 133.102(a) and 133.102(b),

(2) A trickling filter or waste stabilization pond is used as the principal process, and

(3) The treatment works provide significant biological treatment of municipal wastewater.

(h) *mg/l*. Milligrams per liter.

(i) *NPDES*. National Pollutant Discharge Elimination System.

(j) *Percent removal*. A percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the raw wastewater influent pollutant concentrations to the facility and the 30-day average values of the effluent pollutant concentrations for a given time period.

(k) *Significant biological treatment*. The use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of a least 65 percent removal of BOD_5.

(l) *SS*. The pollutant parameter total suspended solids.

(m) *Significantly more stringent limitation* means BOD_5 and SS limitations necessary to meet the percent removal requirements of at least 5 mg/l more stringent than the otherwise applicable concentration-based limitations (e.g., less than 25 mg/l in the case of the secondary treatment limits for BOD_5 and SS), or the percent removal limitations in §§ 133.102 and 133.105, if such limits would, by themselves, force significant construction or other significant capital expenditure.

(n) *State Director* means the chief administrative officer of any State or interstate agency operating an ''approved program,'' or the delegated representative of the State Director.

[49 FR 37006, Sept. 20, 1984; 49 FR 40405, Oct. 16, 1984, as amended at 50 FR 23387, June 3, 1985]

§ 133.102 Secondary treatment.

The following paragraphs describe the minimum level of effluent quality attainable by secondary treatment in terms of the parameters—BOD_5, SS and pH. All requirements for each parameter shall be achieved except as provided for in §§ 133.103 and 133.105.

(a) *BOD_5*.

(1) The 30-day average shall not exceed 30 mg/l.

(2) The 7-day average shall not exceed 45 mg/l.

(3) The 30-day average percent removal shall not be less than 85 percent.

(4) At the option of the NPDES permitting authority, in lieu of the parameter BOD_5 and the levels of the effluent quality specified in paragraphs (a)(1), (a)(2) and (a)(3), the parameter $CBOD_5$ may be substituted with the following levels of the $CBOD_5$ effluent quality provided:

(i) The 30-day average shall not exceed 25 mg/l.

(ii) The 7-day average shall not exceed 40 mg/l.

(iii) The 30-day average percent removal shall not be less than 85 percent.

(b) *SS*. (1) The 30-day average shall not exceed 30 mg/l.

(2) The 7-day average shall not exceed 45 mg/l.

(3) The 30-day average percent removal shall not be less than 85 percent.

(c) *pH*. The effluent values for pH shall be maintained within the limits

of 6.0 to 9.0 unless the publicly owned treatment works demonstrates that: (1) Inorganic chemicals are not added to the waste stream as part of the treatment process; and (2) contributions from industrial sources do not cause the pH of the effluent to be less than 6.0 or greater than 9.0.

[49 FR 37006, Sept. 20, 1984; 49 FR 40405, Oct. 16, 1984]

§ 133.103 Special considerations.

(a) *Combined sewers.* Treatment works subject to this part may not be capable of meeting the percentage removal requirements established under §§ 133.102(a)(3) and 133.102(b)(3), or §§ 133.105(a)(3) and 133.105(b)(3) during wet weather where the treatment works receive flows from combined sewers (*i.e.*, sewers which are designed to transport both storm water and sanitary sewage). For such treatment works, the decision must be made on a case-by-case basis as to whether any attainable percentage removal level can be defined, and if so, what the level should be.

(b) *Industrial wastes.* For certain industrial categories, the discharge to navigable waters of BOD_5 and SS permitted under sections 301(b)(1)(A)(i), (b)(2)(E) or 306 of the Act may be less stringent than the values given in §§ 133.102(a)(1), 133.102(a)(4)(i), 133.102(b)(1), 133.105(a)(1), 133.105(b)(1) and 133.105(e)(1)(i). In cases when wastes would be introduced from such an industrial category into a publicly owned treatment works, the values for BOD_5 and SS in §§ 133.102(a)(1), 133.102(a)(4)(i), 133.102(b)(1), 133.105(a)(1), 133.105(b)(1), and 133.105(e)(1)(i) may be adjusted upwards provided that: (1) The permitted discharge of such pollutants, attributable to the industrial category, would not be greater than that which would be permitted under sections 301(b)(1)(A)(i), 301(b)(2)(E) or 306 of the Act if such industrial category were to discharge directly into the navigable waters, and (2) the flow or loading of such pollutants introduced by the industrial category exceeds 10 percent of the design flow or loading of the publicly owned treatment works. When such an adjustment is made, the values for BOD_5 or SS in §§ 133.102(a)(2), 133.102(a)(4)(ii), § 133.102(b)(2), 133.105(a)(2), 133.105(b)(2), and 133.105(e)(1)(ii) should be adjusted proportionately.

(c) *Waste stabilization ponds.* The Regional Administrator, or, if appropriate, State Director subject to EPA approval, is authorized to adjust the minimum levels of effluent quality set forth in § 133.105 (b)(1), (b)(2), and (b)(3) for treatment works subject to this part, to conform to the SS concentrations achievable with waste stabilization ponds, provided that: (1) Waste stablization ponds are the principal process used for secondary treatment; and (2) operation and maintenance data indicate that the SS values specified in § 133.105 (b)(1), (b)(2), and (b)(3) cannot be achieved. The term ''SS concentrations achievable with waste stabilization ponds'' means a SS value, determined by the Regional Administrator, or, if appropriate, State Director subject to EPA approval, which is equal to the effluent concentration achieved 90 percent of the time within a State or appropriate contiguous geographical area by waste stabilization ponds that are achieving the levels of effluent quality for BOD_5 specified in § 133.105(a)(1). [cf. 43 FR 55279].

(d) *Less concentrated influent wastewater for separate sewers.* The Regional Administrator or, if appropriate, State Director is authorized to substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements set forth in §§ 133.102(a)(3), 133.102(a)(4)(iii), 133.102(b)(3), 102.105(a)(3), 133.105(b)(3) and 133.105(e)(1)(iii) provided that the permittee satisfactorily demonstrates that: (1) The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater, (2) to meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standards, and (3) the less concentrated influent wastewater is not the result of excessive I/I. The determination of whether the less concentrated wastewater is the result of

Attachment H

Watershed General Permit Registration Statement and Offset Plan

Kazio, Jeremy (DEQ)

From: Brockenbrough, Allan (DEQ)
Sent: Thursday, March 29, 2012 10:28 AM
To: Kazio, Jeremy (DEQ)
Subject: RE: Regatta Point Marina

Looks good to me. I'll get a GP number for you. Just let me know when you are ready to issue the permit and I'll issue the GP at the same time.

From: Kazio, Jeremy (DEQ)
Sent: Thursday, March 29, 2012 10:13 AM
To: Brockenbrough, Allan (DEQ)
Subject: FW: Regatta Point Marina

Allan,

Bill Rosenbaum provided me with a revised Watershed GP registration statement which includes a narrative addressing the offset plan for Regatta Point Yacht Club STP (see attached). Please let me know if this is all you need. Thanks!!

From: WER [mailto:bill.rosenbaum@progressengineers.com]
Sent: Tuesday, March 27, 2012 3:12 PM
To: Kazio, Jeremy (DEQ)
Subject: Regatta Point Marina

Jeremy:

Attached is the requested statement regarding offsets. I will mail the copies of the documents with original signatures shortly. Please let me know if you need anything else.

Thanks

Bill Rosenbaum

William E. Rosenbaum, P.E.
Principal
Progress Engineers, P.C.
868 Gloucester Road

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMIT REGISTRATION STATEMENT
FOR TOTAL NITROGEN AND TOTAL PHOSPHORUS DISCHARGES AND NUTRIENT TRADING
IN THE CHESAPEAKE WATERSHED IN VIRGINIA

1. **APPLICANT INFORMATION**

A. Name of Facility: Regatta Point Yacht Club STP

B. Facility Owner: John C. Dozier

C. Owner's Mailing Address

a. Street or P.O. Box P.O. Box 1188

b. City or Town Deltaville c. State VA d. Zip Code 23043

e. Phone Number 804.776.8400 f. Fax Number 804.776.0672

g. E-mail address jcd990@gmail.com

D. Facility Location: 137 Neptune Lane
Street No., Route No., or Other Identifier

Middlesex
County

E. Is the operator of the facility also the owner? ☒ Yes ☐ No
If No, complete F. & G.

F. Name of Operator: John C. Dozier

G. Operator's Mailing Address

a. Street or P.O. Box P.O. Box 1188

b. City or Town Deltaville c. State VA d. Zip Code 23043

e. Phone Number 804.776.8400 f. Fax Number 804.776.0672

g. E-mail address jcd990@gmail.com

2. **FACILITY INFORMATION**

Does this facility currently have a VPDES permit? ☒ Yes ☐ No

If no, has a permit been applied for? ☐ Yes ☐ No

If yes to either of the above questions, provide permit number. VA0090921

3. **AGGREGATED DISCHARGES**

If the owner or operator listed above desires to aggregate the facility's mass load limits for total nitrogen and total phosphorus with other permitted facilities under common ownership or operation in the same tributary, list all affected facilities and the VPDES permit numbers assigned to these facilities.

Facility Name	VPDES permit number

4. **TRANSFER OF ALLOCATION TO OR FROM ANOTHER FACILITY**

If the owner or operator listed above proposes the exchange of an allocation for total nitrogen or total phosphorus with other permitted facilities, list all affected facilities, the VPDES permit numbers assigned to these facilities, the delivered pounds of total nitrogen or total phosphorus proposed for exchange and the calendar years for which the exchange will be in effect.

Facility	VPDES#	N/P	Delivered pounds	Acquired/transferred?	Calendar years?

Attach a copy of the applicable contract documentation related to the execution of these allocations.

5. **REQUIRED ATTACHMENT FOR NEW AND EXPANDED FACILITIES**

Plan to offset new or increased delivered total nitrogen and delivered total phosphorus loads for a minimum of 5 years. N/A - See Attached

6. **CERTIFICATION:**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Signature _____ Date: 3/9/12

Name of person(s) signing above: John C. Dozier
(printed or typed)

Title(s): Owner

For Department Use Only:

Accepted/Not Accepted by: _____ Date: _____

Regatta Point Yacht Club
VA0090921

General Permit Application
Item 5

Regatta Point Yacht Club has not constructed a treatment facility and therefore has not begun discharging. In completing our application for a general permit, Item 5 requires a "plan to offset new or increased delivered total nitrogen and delivered total phosphorous loads for a minimum of 5 years." We would like to obtain a general permit at this time, but have no present plan to construct a treatment facility and begin discharging during the life of our current permit or during the five years following its renewal, which would run to July of 2017. If our plans were to change, we would submit the required five year plan to offset delivered total nitrogen and delivered total phosphorus to your office for approval prior to commencement of construction of the treatment facility.